DOCUMENT RESUME

ED 122 898 JC 760 284

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TITLE Occupational Program Evaluation Model Developed and Implemented by Gateway Technical Institute, Kenosha, Wisconsin.
PUB DATE Mar 76
NOTE 14p.; Paper presented at the Annual Meeting of the American Association of Community and Junior Colleges (56th, Washington, D.C., March 17-19, 1976)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Evaluation Criteria; Evaluation Methods; Job Placement; Junior Colleges; Measurement Techniques; Persistence; Program Costs; *Program Effectiveness; *Program Evaluation; Student Enrollment; *Technical Institutes; *Vocational Education
IDENTIFIERS Gateway Technical Institute

ABSTRACT

A screening mechanism using objective data was developed to determine which of the nearly 60 different associate degree and diploma occupational programs offered by Gateway Technical Institute should be subjected to in-depth evaluation and at what frequency the evaluation should be conducted. Four factors for which objective data were available were chosen as indicators of program effectiveness. The factors are: (1) ability of a program to attract students--increase, stability, or decrease in program enrollments; (2) ability of a program to retain students--percent of students enrolled, to students completing a program, averaged over a 3-year period; (3) ability of a program to place students in positions for which they have been trained--average percent of desirable placements over a 3-year period; (4) program costs, calculated per student. This four-factor evaluation model is applied annually to all occupational programs; programs having below average indices on three or four factors are automatically selected for a further in-depth evaluation; programs below average on one or two factors are considered for in-depth evaluation. Appendices provide sample calculations for each of the four factors. (BB)

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ED122898

OCCUPATIONAL PROGRAM EVALUATION MODEL DEVELOPED AND IMPLEMENTED

by

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Paper Prepared

for

AMERICAN ASSOCIATION OF COMMUNITY AND JUNIOR COLLEGES
56th Annual Convention
March 17-19, 1976
Washington, D.C.

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Gateway Technical Institute presently offers nearly sixty different associate degree or diploma occupational programs, at four different locations. These are the Kenosha Campus, Racine Campus, Elkhorn Campus and Aviation Center. Associate degree and diploma courses are offered at several other locations.

Occupational programs should be subjected to an in-depth evaluation periodically to determine whether the programs are meeting present day needs. It is difficult, if not impossible, for any one person or group of individuals to maintain a "pulse" of each of these programs. Gradual changes occur in occupational programs that are not readily apparent to either students, faculty or administration.

Several factors can have negative or positive effects upon a program. Among these factors are:

1. The type and quality students attracted to the program.
2. Alterations to or lack of alterations to a curriculum.
3. Changes in the faculty assigned to the program.
4. The facilities and equipment available for the program.
5. The image of the program to potential students, present students and to the community.
6. Job opportunities for students who leave the program before completion and for graduates who have completed the program.

These are but six factors which can have an effect on the quality and effectiveness of an occupational program. Subtle changes in any one of these factors can influence how well the

program is meeting the needs of students and the business and industry community the program was designed to serve.

Time and resources available do not permit an in-depth evaluation of all sixty occupational programs offered by Gateway Technical Institute on an annual basis. Therefore, some mechanism was needed in order to determine which programs should be subjected to an in-depth analysis. Troublesome programs, those programs which have difficulty attracting students, retaining students, low number of graduates, low placement in occupations for which training was provided, unattractive placement opportunities or salaries and programs with high costs and high staff turnover rates probably should be evaluated more frequently then less troublesome programs. Some programs should be subjected to an in-depth evaluation every two to three years, while other programs should be evaluated in this manner only every eight to ten years.

A MECHANISM TO DETERMINE WHICH PROGRAMS TO EVALUATE

A mechanism using objective data was developed to determine which programs should be subjected to an in-depth evaluation. Four major criteria were selected to determine which program should be subjected to an in-depth evaluation. These criteria are:

1. The ability of a program to attract students.
2. The ability of a program to retain students.
3. The ability of a program to place students in desirable positions for which they have been trained.
4. Cost of the program.

Objective data was available to analyze all programs on these four factors. Programs that have below average indices on three or four of these factors are automatically given an in-depth evaluation. Programs below average on one or two of these factors are considered for in-depth evaluation.

Ability of a Program to Attract Students

There are two ways of evaluating a program's ability to attract students. One method is to compare program enrollments against program capacity. The limitation to this method is the fact that the program capacity number is somewhat arbitrary. Another approach to determine a program's ability to attract students is whether program enrollments have increased, remained stable or decreased over the past three or four years. This is the method recommended.

If program enrollments decrease or the number of FTE's generated by a program decrease, there should be cause for concern and actions should be implemented to reverse the trend. Appendix A provides examples of methods which could be employed to evaluate a program's ability to attract students.

Ability of a Program to Retain Students

The ability of a program to retain students can best be determined by calculating the percent of students who enrolled in a program that graduated two semesters (diploma programs) or four semesters (associate degree programs) later. To handle the part-time students in a program the number of part-time students is

divided by a factor of five (5) on the assumption that the average part-time student ought to complete an associate program within five years. A factor of three (3) is used for one year diploma programs. These percentages are calculated for each of the programs over the past three year period. The three year average for each program can then be calculated. The average percent for a program can then be compared with the average percent for all similar type programs.

Example:

We may find that the occupational one year diploma programs in the Trade and Industry Department might have an average retention of 64%. The programs that would have a retention percentage of 40% or 50% would then be subject to an in-depth evaluation to determine what factors contribute to the low retention rate in those programs. Appendix B illustrates how the retention rate of a program is determined.

The Ability of a Program to Place Students In Positions For Which They Have Been Trained

We know which programs have high placement of its graduates into desirable positions for which they have been trained. Information from six month follow-up studies are evaluated to determine percent of graduates placed in positions for which they have been trained. Determining the average percent of desirable placement over the past three years for each program and then comparing this percentage against the average for similar type programs will identify those programs which are experiencing difficulty placing graduates in

desirable positions. An example, using actual data, from the past three follow-up studies for the health occupations programs is presented in Appendix C.

This same appendix also reviews the average monthly salary of the graduates from these four health occupations programs over the past three years. This is probably the best indicator available to us, without in-depth study, of the desirability of the occupation for which the graduates have been trained.

Cost of the Program

The fourth factor which is considered in determining which programs to evaluate is the cost of a program. The figures which are used at present for such an evaluation are those provided by applying NCHEMS cost models to the costs at our institution. These cost models have provided us with useful information to compare program costs.

These costs are calculated per student enrolled in the various occupational programs. An illustration as to how these costs would be used to compare programs is provided in Appendix D.

Appendix E provides two completed copies of the work sheets developed to collect this data on each of the sixty different occupational programs. The first sheet, Horticulture-Retail, is an example of a strong program on the majority of the factors considered. The second sheet, Marketing-Fashion Merchandising, is an example of a program experiencing more problems.

This occupational evaluation model is applied annually to all occupational programs at Gateway Technical Institute. This past year seventeen of the sixty occupational programs were "out-of-step" on two, three or four of the factors on which they were evaluated. Six of the programs with major concerns are now receiving an in-depth evaluation by committees consisting of faculty members, administrators, students, graduates and advisory committee members to identify the specific causes behind the concerns and to make recommendations for program improvement.

The CIPP Evaluation Model developed by D. L. Stufflebeam has been modified and is employed as the model for this in-depth evaluation of "problem" programs.

APPENDIX A

Ability Of A Program To Attract Students

Example:

Program	Program Capacity	First Year Enrollments 1971	1972	1973	1974
A	50	35	40	45	50
B	100	80	72	70	70
C	20	20	16	18	20
D	80	40	40	50	60

I. Comparison Of Program Capacity To Enrollment Method

Program	4 Year Average	Percent of Capacity
A	42.5	85.0
B	73.0	73.0*
C	18.5	92.5
D	47.5	59.4*
Average of Four Programs		77.7

*Programs B and D would be subject to evaluation using this method.

II. Program Growth Comparison Method

Program	Four Year Growth	Percent Change
A	+15	+42.9
B	-10	-12.5*
C	0	0*
D	+20	+50
Average of Four Programs		+14.5

*Program B and possibly Program C would be subject to evaluation using this method.

APPENDIX B

Ability Of A Program To Retain Students

Example: Enrollments

Program	1971	1972	1973	3 - Year Average
Auto Body	16	16	16	16
Auto Mechanics	15+10 17	18+5 19	18+15 21	19
Welding	11+5 12	12+5 13	30+10 32	19
Machine Tool	12	14	16	18

Example: Graduates

	1972	1973	1974	3 - Year Average
Auto Body	14	16	6	12
Auto Mechanics	16	13	16	15
Welding	8	12	20	13.3
Machine Tool	11	10	10	10.3

Example:	Retention Percent
Auto Body	12/16 = 75%
Auto Mechanics	15/19 = 79%
Welding	13.3/19 = 70%*
Machine Tool	10.3/18 = 57%*
Average - Four Programs	50.6/72 = 70%

*In this illustration, the Machine Tool program and possibly the Welding program would be subject to review.

APPENDIX C

Ability Of A Program To Place Graduates In Positions For Which Trained

Program	Placement Percentage 1971	1972	1973	3 - Year Average
Dental Assistant	80	75	85	80*
Medical Assistant	60	77	71	69*
Operating Room Assistant	100	90	88	93
Practical Nursing	95	96	96	96
Average - Four Programs	90	88	92	90

These four programs, over the past three years, have averaged placing 90% of their graduates in positions for which trained, over these three years, the Medical Assistant and Dental Assistant have been less successful in placing graduates in positions for which they were trained then the other two diploma health occupation programs.

Ability Of A Program To Place Graduates In Desirable Positions

Program	Average Monthly Salary 1971	1972	1973	3 - Year Average
Dental Assistant	362	368	371	367
Medical Assistant	347	402	432	394
Operating Room Assistant	529	437	501	489
Practical Nursing	508	508	577	531
Average - Four Programs	436.50	428.75	470.25	445

APPENDIX D

Cost Of The Program

Example:

Program	Full Cost Per Credit
Account Clerk	44.78
Automotive	55.77
Business Machines	56.57
Clerk Typist	48.30
Dental Assistant	49.65
Mechanical Drafting	53.94
Machine Tool	58.28
Medical Assistant	48.72
Practical Nursing	73.01
Stenography	48.96
Welding	49.51
Average Eleven Programs	53.41

A review of these eleven occupational programs indicates that only one program, Practical Nursing, has a full credit cost per credit in excess of ten percent over the average cost of these programs. This may or may not be a concern, but it is a factor which at least should be reviewed.

Appendix E

Horticulture-Retail

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Program Capacity 50

Full-time first year students:

1971 24 1972 36 1973 51 1974 43 Percent Change +16%

Part-time first year students:

1971 11 1972 22 1973 19 1974 33 Percent Change +90%

Full-time second year students:

1971 7 1972 9 1973 17 1974 25 Percent Change +127%

Part-time second year students:

1971 3 1972 1 1973 8 1974 11 Percent Change +175%

Full Time Equivalent (FTE)

1971 37.13 1972 57.80 1973 82.80 1974 91.93 Percent Change +55%

Number of graduates:

1972 8 1973 12 [illegible] +70%

Number of students placed in oc[illegible]or which trained:

1972 5 1973 6 [illegible] Percent Change +27%

Starting salaries of above:

1972 $424 1973 $507 1974 $440 Percent Change - 6%

Retention Percent 50% Placement Percent 86%

Full Cost Per Credit $46.26

APPENDIX E

Marketing-Fashion Merchandising

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Program Capacity 105

Full-time first year students:

1971 62 1972 48 1973 35 1974 25 Percent Change -49%

Part-time first year students:

1971 50 1972 61 1973 53 1974 37 Percent Change -33%

Full-time second year students:

1971 12 1972 15 1973 14 1974 6 Percent Change -57%

Part-time second year students:

1971 11 1972 22 1973 8 1974 6 Percent Change -57%

Full Time Equivalent (FTE)

1971 93.07 1972 96.07 1973 74.93 1974 59.20 Percent Change -33%

Number of graduates:

1972 16 1973 20 1974 10 Percent Change -45%

Number of students placed in occupations for which trained:

1972 10 1973 5 1974 8 Percent Change + 6%

Starting salaries of above:

1972 $331 1973 $414 1974 $451 Percent Change +21%

Retention Percent 32% Placement Percent 42%

Full Cost Per Credit $36.01